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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/014,267	10/22/2001	Gunter A. Kohler	52314US016	5099

32692 7590 02/13/2003

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EXAMINER

CROWELL, ANNA M

ART UNIT	PAPER NUMBER
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1763

DATE MAILED: 02/13/2003

4

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application N .

10/014,267

Applicant(s)

KOHLER ET AL.

Examiner

Michelle Crowell

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②
#4

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 October 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 41-50 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 41-50 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 October 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>3</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description:

A third compartment 43 (page 13, line 17) and an anode wire 322 (page 21, line 26). A

proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 42-46 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. Claims 42 recites the limitation "the hollow cathode" in line 1. There is insufficient antecedent basis for this limitation in the claim.

5. Claims 44 recites the limitation "the hollow cathode" in line 1. There is insufficient antecedent basis for this limitation in the claim.

6. Claims 45 recites the limitation "the hollow cathode" in line 1. There is insufficient antecedent basis for this limitation in the claim.

7. Claim 46 recites the limitation "the ceramic tube" on page 60, line 1. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 41-45, 47, and 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kohler et al. (U.S. 5,464,667) in view of Yializis (U.S. 4,954,371).

Referring to Figures 1, 2, and 4, column 4, lines 25-44, column 7, lines 36-46, column 8, lines 25-28, lines 45-51, and column 9, lines 22-32, and column 19, lines 65-67, Kohler discloses a jet plasma apparatus comprising a hollow cathode slot system 40 (col. 9, lines 22-30) and an adjustable anode system 60 (col. 10, lines 35-41). The hollow cathode slot system 40 includes three compartments in series: a first compartment 41, a second compartment 42, and a third compartment 43 (col. 7, lines 16-19). The first compartment 41 has a hollow cathode tube 44 (point source) (col. 7, lines 36-42), the second compartment 42 is a mixing chamber connected to both the first and second compartment (col.8, lines 1-3), and the third compartment 43 has two parallel electrode plates 55 and 56 (col.8, lines 45-47). The hollow cathode tube 44 is surrounded by the cylindrical walls 44. In addition, a substrate 75 contacts a radio frequency bias electrode 70 during the deposition process.

Kohler fails to teach an oil delivery system and a magnet surrounding the cylinder.

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Referring to Figures 5 and 6 and column 5, lines 3-10, 36-48, col. 8, lines 67 – col. 9, lines 10, and column 11, lines 29-36, Yializis teaches that it is well-known to provide a vaporization apparatus 110, 261 (oil delivery system) with a plasma generation apparatus 233. The oil delivery system includes an atomizer 115 for forming droplets, a vaporization chamber 116, and a nozzle structure 118 for delivering the vapor to the chamber 123. Various materials are selected for the oil delivery system such as natural oils or silicone. After the oil delivery system provides the vapor material to the chamber 123, the plasma generation apparatus 233 provides radiation curing to the material and thus yields a crosslinked coating on the substrate. A crosslinked coating has increased heat resistant and etch resistant properties. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the jet plasma apparatus of Kohler with the oil delivery system as taught by Yializis. This would provide a crosslinked coating material with increased heat resistance and etch resistance, and therefore more durable.

10. Claims 46 and 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kohler et al. (U.S. 5,464,667) in view of Yializis (U.S. 4,954,371) and Cann et al. (U.S. 5,342,660).

The teachings of Kohler in view of Yializis are disclosed above.

Kohler in view of Yializis fails to teach magnets.

Referring to Figure 1 and column 3, lines 31-35, Cann teaches magnets 217 surrounding the plasma jet apparatus 215. The magnets are used to accelerate and focus the plasma towards the deposition region. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the plasma jet apparatus of Kohler in view of Yializis with

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magnets as taught by Cann. This would allow the plasma to be accelerated and focused towards the substrate.

Double Patenting

11. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

12. Claims 41-44 and 47-48 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 15, 16, 18, and 19 of U.S. Patent No. 5,464,667 in view of Yializis (U.S. 4,954,371).

Claims 41-44 and 47-48 of the present application differ from claims 15, 16, 18, and 19 by adding the limitation of an oil delivery system.

Although the present Kohler adds the limitation of an oil delivery system to the jet plasma apparatus, it is obvious over Yializis.

Yializis discloses an oil delivery system used with a plasma generation apparatus. The oil delivery system includes an atomizer for forming droplets, a vaporization chamber, and a nozzle structure for delivering the vapor to the chamber. Various materials are selected for the

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oil delivery system such as natural oils or silicone. After the oil delivery system provides the vapor material to the chamber, the plasma generation apparatus provides radiation curing to the material and thus yields a crosslinked coating on the substrate.

It is the Examiner's position that it would have been obvious to one of ordinary skill in the art to provide the jet plasma apparatus of Kohler with the oil delivery system as taught by Yializis. This would produce a crosslinked coating with increased heat resistance and etch resistance, and therefore more durable.

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michelle Crowell whose telephone number is (703) 305-1956. The examiner can normally be reached on M-F (8:00 - 4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Mills can be reached on (703) 308-1633. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

AMC *item C*
February 10, 2003


SHRIVE P. BECK
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700